

**PENGARUH PROSES *DEPULPING* DAN PENAMBAHAN KULTUR  
STARTER *Lactobacillus plantarum* HL-15 PADA PROSES FERMENTASI  
TERHADAP MUTU BIJI KAKAO (*Theobroma cacao* L.)**

**INTISARI**

Oleh:

**MARSEKAL SABRANG ANANTAMA**

**16/400536/TP/11749**

Indonesia sebagai salah satu negara penghasil biji kakao terbesar di dunia masih memiliki kelemahan, yaitu pengolahan biji yang belum optimal sehingga harga jual dan kualitas biji yang dihasilkan rendah. Oleh karena itu, perlu dilakukan upaya penanganan pasca panen yang baik untuk meningkatkan kualitas produk biji kakao lokal.

Pada penelitian ini dilakukan penanganan pasca panen kakao dengan proses *depulping* dan fermentasi biji kakao. Perlakuan awal *depulping* dapat menurunkan kadar pulp biji kakao sebelum proses fermentasi sehingga jumlah material yang diuraikan oleh mikroba fermentatif lebih sedikit. Sedangkan penambahan *Lactobacillus plantarum* HL-15 sebagai kultur starter pada proses fermentasi dapat menekan jumlah cemar jamur yang muncul. Sehingga dilakukan penelitian yang bertujuan untuk mengetahui kualitas mikrobiologis (pola pertumbuhan mikrobial) biji kakao selama masa fermentasi dan mengetahui mutu biji kakao kering berdasarkan SNI nomor 2323:2008/Amd1:2010. Sampel yang digunakan dalam penelitian ini adalah biji kakao jenis Lindak. Perlakuan awal *depulping* terhadap biji kakao dilakukan dengan menurunkan konsentrasi pulp sebesar 40%. Biji kakao yang telah diturunkan konsentrasinya tersebut selanjutnya difermentasi dalam kotak berkapasitas 40 kg selama 5 hari. Rancangan penelitian yang digunakan adalah Rancangan Acak Lengkap dengan 3 variasi metode fermentasi yaitu (1) perlakuan awal *depulping*; (2) kombinasi perlakuan awal *depulping* dan penambahan kultur starter *Lactobacillus plantarum* HL-15; serta (3) tanpa perlakuan awal *depulping* dan tanpa penambahan kultur starter *Lactobacillus plantarum* HL-15. Penelitian dilakukan sebanyak 2 kali ulangan. Adapun parameter yang dianalisa selama 5 hari fermentasi adalah total populasi yeast, bakteri asam laktat (BAL), bakteri asam asetat (BAA), dan total jamur serta pengamatan suhu dan kelembapan relatif ruangan. Sedangkan analisa mutu sesuai Standar Nasional Indonesia (SNI) nomor 2323:2008/Amd1:2010 dan aktivitas air dilakukan untuk biji kakao yang sudah dikeringkan selama 7 hari.

Hasil penelitian menunjukkan bahwa kombinasi perlakuan awal *depulping* dan penambahan kultur starter *Lactobacillus plantarum* HL-15 diketahui tidak mengganggu pertumbuhan yeast, BAL, dan BAA (proses fermentasi tetap dapat berjalan dengan baik) dan memiliki kecenderungan menurunkan jumlah populasi pertumbuhan jamur serta menghasilkan biji kakao yang dapat memenuhi persyaratan mutu Standar Nasional Indonesia (SNI) 2323:2008/Amd1:2010.

Kata kunci: *depulping*, fermentasi biji kakao, *Lactobacillus plantarum* HL-15, aktivitas anti jamur, bakteri asam laktat.

**THE EFFECT OF DEPULPING PROCESS AND ADDITION OF  
*Lactobacillus plantarum* HL-15 STARTER CULTURE IN  
FERMENTATION PROCESS ON THE QUALITY OF COCOA BEANS  
(*Theobroma cacao* L.)**

**ABSTRACT**

**Oleh:**

**MARSEKAL SABRANG ANANTAMA**

**16/400536/TP/11749**

Indonesia as one of the largest cocoa beans producing countries in the world still has weaknesses, that is the processing of cocoa beans is not optimal so that the selling price and quality of the beans produced are low. Therefore, it is necessary to make a good post-harvest handling efforts to improve the quality of local cocoa bean products.

In this study, post-harvest handling of cocoa was carried out by depulping and fermenting cocoa beans. The depulping pretreatment can reduce the level of cocoa bean pulp before the fermentation process so that the amount of material broken down by fermentative microbes is less. Meanwhile, the addition of *Lactobacillus plantarum* HL-15 as a culture starter in the fermentation process can suppress the amount of fungal contamination that appears. The objective of this study were to find out the microbiological quality (microbial growth patterns) of cocoa beans during the fermentation period and to know the dry cocoa beans quality based on *Standar Nasional Indonesia* (SNI) number 2323:2008/Amd1: 2010. The sample used in this study was the *Lindak* cacao bean. The depulping pretreatment of cocoa beans was carried out by reducing 40% of pulp concentration. The cocoa beans that have been reduced in that concentration, are then fermented in a box with a capacity of 40 kg for 5 days. This research was carried out using the Factorial Completely Randomize Design with 3 variations of the fermentation method, wich were (1) depulping pretreatment; (2) combination of depulping pretreatment and addition of *Lactobacillus plantarum* HL-15 starter culture; as well as (3) without depulping pretreatment and without the addition of *Lactobacillus plantarum* HL-15 starter culture. This research was conducted in 2 replications. The parameters analyzed for 5 days of fermentation were the total population of yeast, lactic acid bacteria (LAB), acetic acid bacteria (AAB), and total mold as well as observations of room temperature and relative humidity. Meanwhile, the quality analysis based on SNI number 2323: 2008/Amd1:2010 and water activity were carried out for cocoa beans that have been dried for 7 days.

The results showed that combination of depulping pretreatment and the adding of *Lactobacillus plantarum* HL-15 starter culture was known doesn't interfere with the growth of yeast, LAB, and AAB (fermentation process could still run well) and had a tendency to reduce the amount of fungal growth, as well as produce cocoa beans in accordance with SNI number 2323:2008/Amd1: 2010 quality requirements.

**Keywords:** depulping, cocoa bean fermentation, *Lactobacillus plantarum* HL-15, antifungal activity, lactic acid bacteria.